3.15 Utilities and Service Systems

This section analyzes the proposed project's and non-clustered scenario's potential impacts on utilities and service systems. The analysis focuses on whether the project's and non-clustered scenario's estimated water demand, wastewater generation, and solid waste generation would be accommodated by existing and future infrastructure (including stormwater drainage facilities), and proposes mitigation measures as needed. Portions of the following analysis are based on various resources including the *Hydrological Analysis for Saddle Crest Homes VTTM No. 17388* (Appendix I.1) conducted for the proposed project as well as the *Conceptual Water Quality Management Plan (CWQMP) for Saddle Crest Homes* (Appendix I.2).

3.15.1 Environmental Setting

Regulatory Framework

Clean Water Act

The Federal Water Pollution Control Act or CWA serves to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The CWA was created in 1972, and then amended in 1977, and again in 1987 when the NPDES program was created. NPDES requires a permit for discharge of pollutants from industrial sources and publicly owned treatment works into navigable waters. The discharge must meet applicable requirements, which are outlined in the CWA and which reflect the need to meet federal effluent limitations and state water quality standards.

Section 303 (d) of the CWA states that each state shall identify those waters within its boundaries for which the effluent limitations required by section 301(b)(1)(A) and section 301 (b)(1)(B) are not stringent enough to implement any water quality standard applicable to such waters. The state shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such water (see Section 3.8, *Hydrology and Water Quality*, of this Draft EIR).

California Administrative Code

The California Administrative Code (CAC) establishes efficiency standards for reducing water usage in new water fixtures. Title 24 CAC, Section 25352, addresses pipe insulation requirements, which reduce the amount of hot water used before reaching equipment and fixtures. Title 20 CAC, Section 1604, provides efficiency standards for water fixtures including lavatory faucets, showerheads, and sink faucets.

California Urban Water Management Planning Act

Section 10610 of the California Water Code establishes the Urban Water Management Planning Act. The act states that every urban water service provider that serves 3,000 or more customers or that supplies over 3,000 acre-feet of water annually should prepare an Urban Water Management

Plan (UWMP) every five years. The goal of an UWMP is to ensure the appropriate level of reliability in water service sufficient to meet the needs of customers during normal, dry, and multiple dry years. The TCWD's UWMP, would apply to the proposed project and non-clustered scenario.

California Environmental Quality Act

Section 15155 of the *CEQA Guidelines* requires a water supply assessment. The assessment is required when a residential development of more than 500 dwelling units is proposed. If the development is part of an existing public water system that has fewer than 5,000 service connections, an assessment is required when the proposed residential development will account for an increase of 10 percent or more in the number of the public water system's existing service connections.

Additionally, the California Supreme Court articulated the following principles for analysis of future water supplies for projects subject to CEQA (*Vineyard Area Citizens for Responsible Growth, Inc., v. City of Rancho Cordova, February 1, 2007*):

- To meet CEQA's informational purposes, the EIR must present sufficient facts to decision makers to evaluate the pros and cons of supplying the necessary amount of water to the project.
- CEQA analysis for large, multiphase projects must assume that all phases of the project will eventually be built and the EIR must analyze, to the extent reasonably possible, the impacts of providing water to the entire project. Tiering cannot be used to defer water supply analysis until future phases of the project are built.
- CEQA analysis cannot rely on "paper water." The EIR must discuss why the identified water should reasonably be expected to be available. Future water supplies must be likely, rather than speculative.
- When there is not a sufficient degree of certainty regarding availability of future water supply, an EIR should acknowledge the degree of uncertainty, include a discussion of possible alternative sources, and identify the environmental impacts of such alternative sources. Where a full discussion still leaves some uncertainly about the long-term water supply's availability, mitigation measures for curtailing future development in the event that intended sources become unavailable may become a part of the EIR's approach.
- The EIR does not need to show that water supplies are definitely assured because such a degree of certainty would be "unworkable, as it would require water planning to far outpace land use planning." The requisite degree of certainty of a project's water supply varies with the stage of project approval. CEQA does not require large projects, at the early planning phase, to provide high degree of assurances of certainty regarding long-term future water supplies.
- The EIR analysis may rely on existing urban water management plans, as long as the project's new demand was included in the water management plan's future demand accounting.

- The ultimate question under CEQA is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable impacts of supplying water to the project.

Although the proposed project and non-clustered scenario include only 65 residential units, the County of Orange determined that an analysis of available water supply for the project is still needed in order to thoroughly address potential environmental impacts related to water supply; therefore the Saddle Crest SAMP, which evaluates impacts related to water supply, water infrastructure, and wastewater services, has been prepared and is analyzed in this Draft EIR (see Appendix L).

Water Quality Control Plan

The Water Quality Control Plan for the San Diego Region regulates water quality per the Porter-Cologne Act of the CWC. Resolution No. R9-2011-0047 amended the San Diego Region Basin Plan with revisions reflecting the 2011 review of the plan. The revised plan reflects the review process by which the San Diego RWQCB identified and prioritized suggested Basin Plan revisions in need of further evaluation. New construction such as that proposed by the project must meet the water quality standards and objectives of the current Basin Plan.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (AB 939) redefined solid waste management in terms of both objectives and planning responsibilities for local jurisdictions and the state. AB 939 was adopted in an effort to reduce the volume and toxicity of solid waste that is landfilled and incinerated by requiring local governments to prepare and implement plans to improve the management of waste resources. AB 939 required each of the cities and unincorporated portions of the counties to divert a minimum of 25 percent of the solid waste sent to landfills by 1995 and 50 percent by the year 2000. To attain goals for reductions in disposal, AB 939 established a planning hierarchy utilizing new integrated solid waste management practices. These practices include source reduction, recycling and composting, and environmentally safe landfill disposal and transformation. Other state statutes pertaining to solid waste include compliance with the California Solid Waste Reuse and Recycling Act of 1991 (AB 1327), which requires adequate areas for collecting and loading recyclable materials within a project site. As a new waste generator, the proposed project would be subject to the requirements of these solid waste provisions, as enforced by the County of Orange.

County of Orange General Plan

Public Services & Facilities Element – Waste Management

Policy 1: To plan solid waste facilities in a manner compatible with surrounding land uses and to review planned land uses adjacent to landfills for their compatibility with landfill operations.

Policy 3: To promote the utilization of waste recycling and reuse measures which extend the operating life of existing solid waste facilities.

Public Services & Facilities Element – Water System

Policy 1: To ensure the adequacy of water system capacity and phasing, in consultation with the service providing agency(ies), in order to serve existing and future development as defined in the General Plan.

Public Services & Facilities Element – Wastewater System

Policy 1: To protect quality in both delivery systems and groundwater basins through effective wastewater system management.

Policy 3: To ensure the adequacy of wastewater system capacity and phasing in consultation with the service providing agency(ies) in order to serve existing and future development as defined by the General Plan.

Foothill/Trabuco Specific Plan

The F/TSP contains the following goal related to utilities and service systems:

Goal 1d: To provide for a circulation system and other infrastructure adequate to serve the ultimate level of development permitted.

The Public Facilities Component of the F/TSP addresses the adequacy of existing public facilities, including water distribution and wastewater, to meet the level of development permitted in the F/TSP. The component addresses adequacy by identifying projected capacity needs of the F/TSP Area and facility improvements required to meet those projected needs. Water distribution and wastewater facilities are discussed below.

Existing Conditions

Current Stormwater Facilities

The project site is located within the jurisdiction of the San Diego RWQCB, Region 9 and within the Aliso Creek Watershed. The Aliso Creek Watershed covers 34.87 square miles (Hunsaker, 2012a). Aliso Creek flows through open space and urban development and outlets at the Pacific Ocean. Aliso Creek's watershed encompasses 23,000 acres, and includes open space, rural and urban development, agriculture and ranching, regional parks and other recreational facilities. The headwaters of the Aliso Creek Watershed originate in the foothills of the Santa Ana Mountains within the Cleveland National Forest. The project site is vacant, undeveloped land and consists of a 100 percent pervious area.

There are currently no water quality problems within the project site (Hunsaker, 2012b). However, the project site is tributary to Aliso Creek. The San Diego RWQCB has identified Aliso Creek as impaired for bacteria, phosphorous, and toxicity. There are currently no Total Maximum Daily Load requirements established for Aliso Creek (Hunsaker, 2012b).

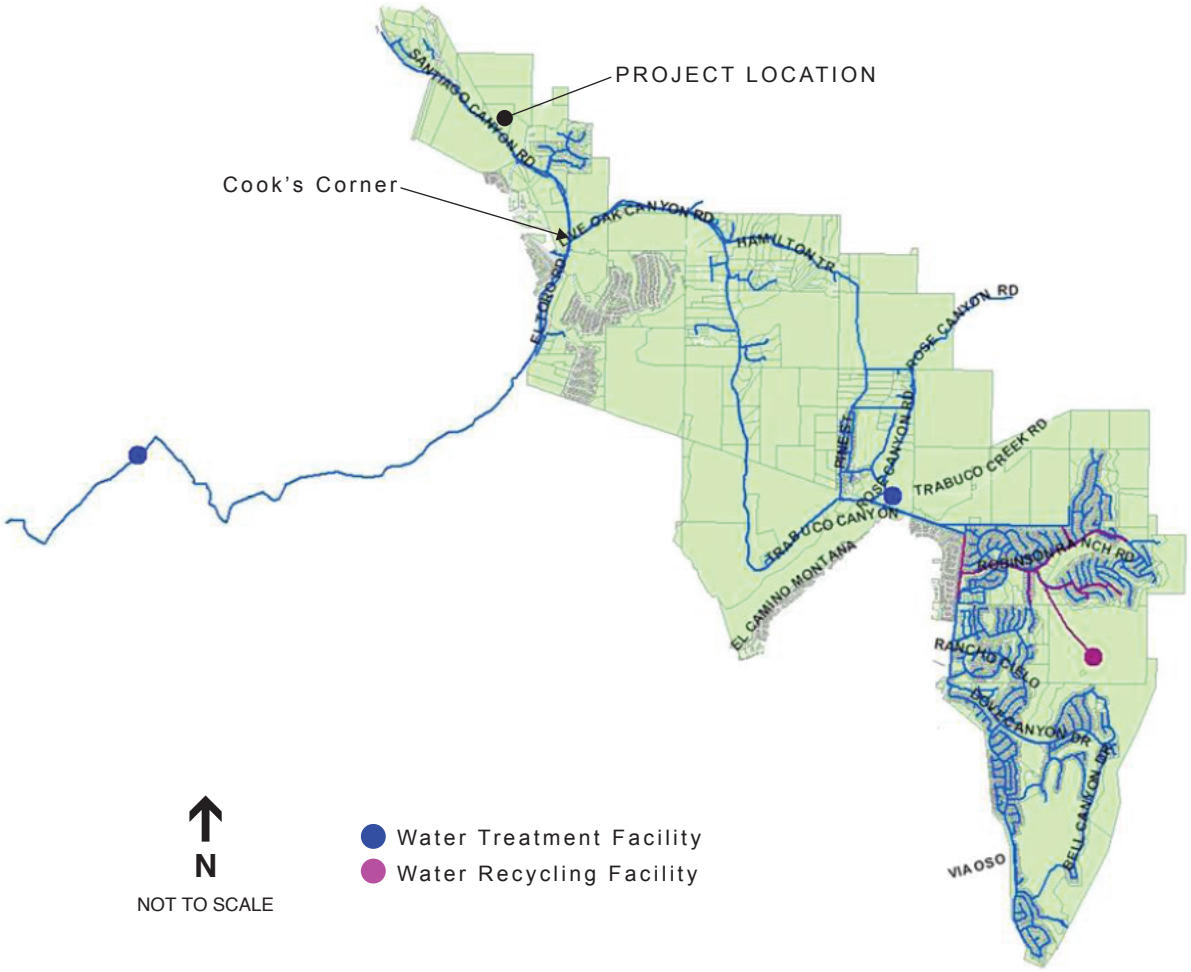
In the existing condition, the project site is part of a 376.8-acre tributary drainage area consisting of five sub-drainage areas which combine to produce a 100-year peak flow of 1,174.8 cfs in Aliso Creek (Hunsaker, 2012a). The point of confluence for the site's five tributary sub-drainage areas is located on the south side of Santiago Canyon Road, near the outlet for the existing drainage facility (eight- by seven-foot reinforced concrete box). Four of the five sub-drainage areas drain to the southeast and convey runoff into this existing drainage facility, which under existing conditions produces a 100-year peak flow of 949.5 cfs. This flows underneath Santiago Canyon Road and discharges into Aliso Creek. The fifth sub-drainage area in the western portion of the site, drains to the southwest to an existing drainage facility (five- by five-foot reinforced concrete box), and also ultimately discharges into Aliso Creek with a 100-year peak flow of 245.8 cfs (Hunsaker, 2012a).

Water Supply

The majority of the F/TSP area is served by the TCWD, which provides water delivery, wastewater, reclaimed water (treated wastewater used for irrigation), and recycled water (captured stormwater used for irrigation) services to an estimated population of 14,900 in the City of Rancho Santa Margarita and unincorporated areas of Orange County (see **Figure 3.15-1**). However, there are no reclaimed water supplies in the western portion of the service boundary where the project site is located. TCWD services communities of communities of Dove Canyon, Rancho Cielo, Robinson Ranch, Santiago Estates, Trabuco Highlands, Walden, Fieldstone, a section of Portola Hills, and Trabuco Canyon (TCWD, 2011a).

TCWD currently provides potable water service to an estimated 3,766 households within the District and 532 households within the Irvine Ranch Water District. It also provides sewer service to 3,497 connections. TCWD's major facilities include the Dimension Water Treatment Plant, Robinson Ranch Wastewater Treatment Plant and Reservoir, Dove Lake, and the Trabuco Creek Wells Facility which includes Rose Canyon Well and Lang Well. TCWD delivers potable water through its pressurized water system consisting of approximately 56 miles of pipelines within nine primary pressure zones. The TCWD's system is interconnected with adjacent agencies including Santa Margarita Water District, Irvine Ranch Water District, and El Toro Water District to provide reliability and redundancy.

TCWD supplies potable water through imported wholesale water supplies and local groundwater; in 2010, the total supply available was 3,519 acre feet per year (afy). The majority of the water is imported from the Metropolitan Water District (MWD). In 2010, approximately 66 percent, or 2,305 afy came from MWD. TCWD has a total purchased annual capacity of 7,240 acre-feet of wholesale water supply consisting of 4,340 afy in the V.P. Baker Aqueduct system and 2,900 afy in the Allen-McColloch Pipeline. TCWD wells located near Trabuco Creek extract groundwater from February through the end of June. In 2010, approximately 318 afy was pumped from these wells. Recycled urban runoff contributed to 100 afy and recycled water contributed 751 afy of the water supply in 2010 (TCWD, 2011a).



SOURCE: TCWD, 2010; and ESA, 2011.

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Figure 3.15-1
TCWD Service Area

TCWD maintains parallel 8-inch and 12-inch diameter domestic water lines located in Santiago Canyon Road, from Cook's Corner to the entrance of the Santiago Estates residential community on Crystal Canyon Road, which is approximately 0.20 mile from the project site, however the 8-inch line has been abandoned along the frontage of the project site due to pipe failures. A single 8-inch water line runs parallel with Santiago Canyon Road from Crystal Canyon Road to the TCWD boundary. Parallel 10-inch and 14-inch water lines are located in Live Oak Canyon Road expanding from Cook's Corner to Harris Grade Reservoir. Harris Grade Reservoir is a 2.42 million gallon facility and is one of two major reservoirs serving the F/TSP area (County of Orange, 2000).

TCWD projects future growth according to their Master Plan, SAMP, and the F/TSP. Projected water demands for 2015 through 2035 are based on population growth and planned developments and are consistent with the General Plan.

TCWD projects sufficient water supply to meet demands from the build out of the F/TSP. **Table 3.15-1** compares TCWD's projected supply and demand in normal years from 2015 through 2035.

TABLE 3.15-1
TCWD SUPPLY AND DEMAND COMPARISON (AF)

	2015	2020	2025	2030	2035
Supply Total [a]	5,034	5,064	5,064	5,064	5,064
Demand Total [b]	4,615	4,650	4,778	4,900	5,018
Difference	419	414	286	164	46

[a] Supply totals include water from MWD, groundwater, and recycled water.
[b] Demand totals include all service areas: residential, commercial, industrial, landscape, and agriculture, as well as system losses.
SOURCE: TCWD, 2011.

Groundwater

TCWD owns two wells that pump groundwater from the San Juan Valley Groundwater Basin. Groundwater sources include the Rose Canyon and Lang Wells which pump from the Arroyo Trabuco aquifer, part of the San Juan Valley Groundwater Basin, and are treated by the recently completed Trabuco Creek Wells Facility before being pumped into the distribution system. The water sourced from the basin is desirable in terms of water quality, cost, and utilization of local energy resources (TCWD, 2011a). In addition, the groundwater supplies are valuable to TCWD, and the region of Southern California as a whole, to be less dependent on imported water supplies (TCWD, 2011a). However, due to the fact that the groundwater sources in the Basin are subject to uncertainty during drought conditions, which often occur naturally in the region, TCWD cannot count on groundwater as a reliable supply source during periods of drought and/or peak demands (TCWD, 2011a) (see *Water Supply* discussion above).

Wastewater

The proposed site is vacant and does not generate any wastewater. TCWD wastewater facilities include the Robinson Ranch Wastewater Treatment Plant (WWTP), and the District also has the capability to divert or convey wastewater to the Chiquita Wastewater Reclamation Plant, which is owned by Santa Margarita Water District. The Robinson Ranch WWTP includes a 0.85 mgd water reclamation treatment facility, eight sewer lift stations and approximately 47 miles of sewers and interceptors. Reclaimed water from the Robinson Ranch WWTP is stored at its Reclaimed Water Reservoir. TCWD's recycled water system is supplied with reclaimed water from the Robinson Ranch WWTP and with urban runoff captured and stored in Dove Lake. The Robinson Ranch WWTP currently has a capacity of 850,000 gallons per day (gpd) or approximately 952 afy, and TCWD also purchases an additional 12,500 gpd (14 afy) of capacity in the Chiquita Wastewater Treatment Facility, giving TCWD a current total capacity of 965 afy (TCWD, 2011b). In 2010, wastewater collected and treated within the TCWD service area was 751 afy. In the years 2015 through 2035, TCWD projects that its system will have the capacity to collect and treat 1,035 afy of wastewater. TCWD's wastewater system includes an 8-inch diameter gravity sewer line is located in Santiago Canyon Road and runs southeasterly from near the TCWD boundary to Cook's Corner, which is approximately 0.66 mile from the project site. This line discharges into an existing 10-inch main which eventually feeds to the 15-inch El Toro Road gravity sewer main. A sewage lift station is located at El Toro Road and Santa Margarita Parkway (approximately 2.6 miles from the project site), which pumps wastewater in 8- and 12-inch force mains to the Chiquita Wastewater Reclamation Plant, which is owned and operated by Santa Margarita Water District (County of Orange, 2000).

Solid Waste

The proposed site is vacant and does not produce any solid waste. Waste Management of Orange County (WMOC) is a privately contracted solid waste collection provider that serves the F/TSP area. WMOC is under contract with the County, and delivers all waste to the countywide landfill system. Solid waste generated within the F/TSP area is hauled to one of the three sites listed in **Table 3.15-2**, which are owned and operated by Orange County Waste and Recycling (OCWR).

TABLE 3.15-2
ACTIVE LANDFILLS

Landfill	Location	Permitted Capacity (tpd)	Daily Average (tpd)	Approximate Closure Date
Frank R. Bowman	11002 Bee Canyon Access Road, Irvine, CA	8,500	7,785	2053
Olinda Alpha	1942 Valencia Avenue, Brea, CA	8,000	7,000	2021[a]
Prima Deshecha	32250 La Pata Avenue, San Juan Capistrano, CA	4,000	4,000	2067

[a] The proposed project is expected to be completed in 2016 and the non-clustered scenario in 2020, it is likely that this landfill will be near its closure date before the project generates solid waste.
SOURCE: OCWR, 2012.

All three of these active landfills are permitted as Class III, which only accepts non-hazardous municipal solid waste.

3.15.2 Thresholds of Significance

According to Appendix G of the *CEQA Guidelines* and the County of Orange Environmental Analysis Checklist, a project would have a significant adverse effect on utilities and service systems if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Not have sufficient water supplies available to serve the project from existing entitlements and resources or would require new or expanded entitlements;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Not comply with federal, state and local statutes and regulations related to solid waste.

The following is a discussion of the potential effects of the proposed project and the non-clustered scenario on utilities and services systems, according to the key issue areas identified in Appendix G of the *CEQA Guidelines*. As identified in the NOP/Initial Study (see Appendix A.1), each of the checklist items have a potential to be significant and would require full analysis in the EIR, as presented below.

3.15.3 Methodology

This assessment evaluates the potential for construction and operational activities under the proposed project or the non-clustered scenario adversely affect utilities and service systems at the project site and in the surrounding area. Several reports were consulted during the analysis, including the addle Crest SAMP that addresses water supply and sewer capacity (see Appendix L), the hydrology analysis (see Appendix I.1), a CWQMP (see Appendix I.2), and the TCWD's UWMP. Analysis includes discussion of existing supply and capacities for water, wastewater and

solid waste, against the proposed project's demand for these utilities to confirm if adequate supply and capacity exists to accommodate the proposed project or the non-clustered scenario.

3.15.4 Project Design Features

The following project design features have been included for the proposed project and some would also apply to the non-clustered scenario. All project design features will be included in the Mitigation Monitoring and Reporting Program and will be monitored to ensure completion, in the same manner as the project's mitigation measures.

PDF-23 The project has been designed to mimic the hydrological characteristics of the site in its natural, undeveloped state through clustering the home sites, controlling development flows (runoff) with a hydromodification basin and water quality basin (PDF-24), and preserving the site's main drainage along the easterly boundary, thereby adhering to current hydromodification requirements established by the current MS4 permit.

PDF-24 The project has been designed to treat development flows (runoff) with a dry extended detention water quality basin, while implementing the following Low Impact Development techniques:

- Conservation of natural areas, including existing trees, other vegetation and soils.
- Keeping streets at minimum widths and eliminating paved sidewalks in parkways.
- Minimizing the impervious footprint of the project.
- Minimizing disturbances to natural drainages.

PDF-25 The proposed project will be designed to include the following best management practices to promote infiltration and slow down surface flows:

- Impervious area dispersion.
- Native landscaping/efficient irrigation.

PDF-34 The project includes a Hydrology Analysis that demonstrates that the proposed development will not overload existing drainage facilities downstream of the project site or exceed existing runoff velocities and peak discharge at discharge points for the 2-, 5-, 10-, 25-, and 100-year storm events.

PDF-36 In order to comply with the MS4 permit, the water quality basin (dry extended detention basin) will be designed for a maximum 72-hour draw down period for retained runoff to mitigate potential vector issues. The hydromodification basin will employ approved vector control treatment measures as specified in the California Department of Public Health's recommendations for best management practices for mosquito control in collaboration with the Orange County Vector Control District to mitigate potential vector issues.

PDF-37 The project will incorporate the use of pervious pavers and roof drains connected to pervious areas.

PDF-40 The project has been designed to include either an on-site pump station or upgrading and connecting to the off-site Topanga Booster Station to provide sufficient fire flow pressure for the upper portions of the project.

PDF-41 The project includes a water storage tank, to provide emergency storage to the residents of the project. The site may also be expanded to provide the Trabuco Canyon Water District with additional capacity to help achieve their emergency storage goals.

PDF-48 The project has been designed so that stormwater will be collected and cleansed through a first flush treatment system.

3.15.5 Project Impacts

Impact 3.15.1: Conflict with wastewater requirements.

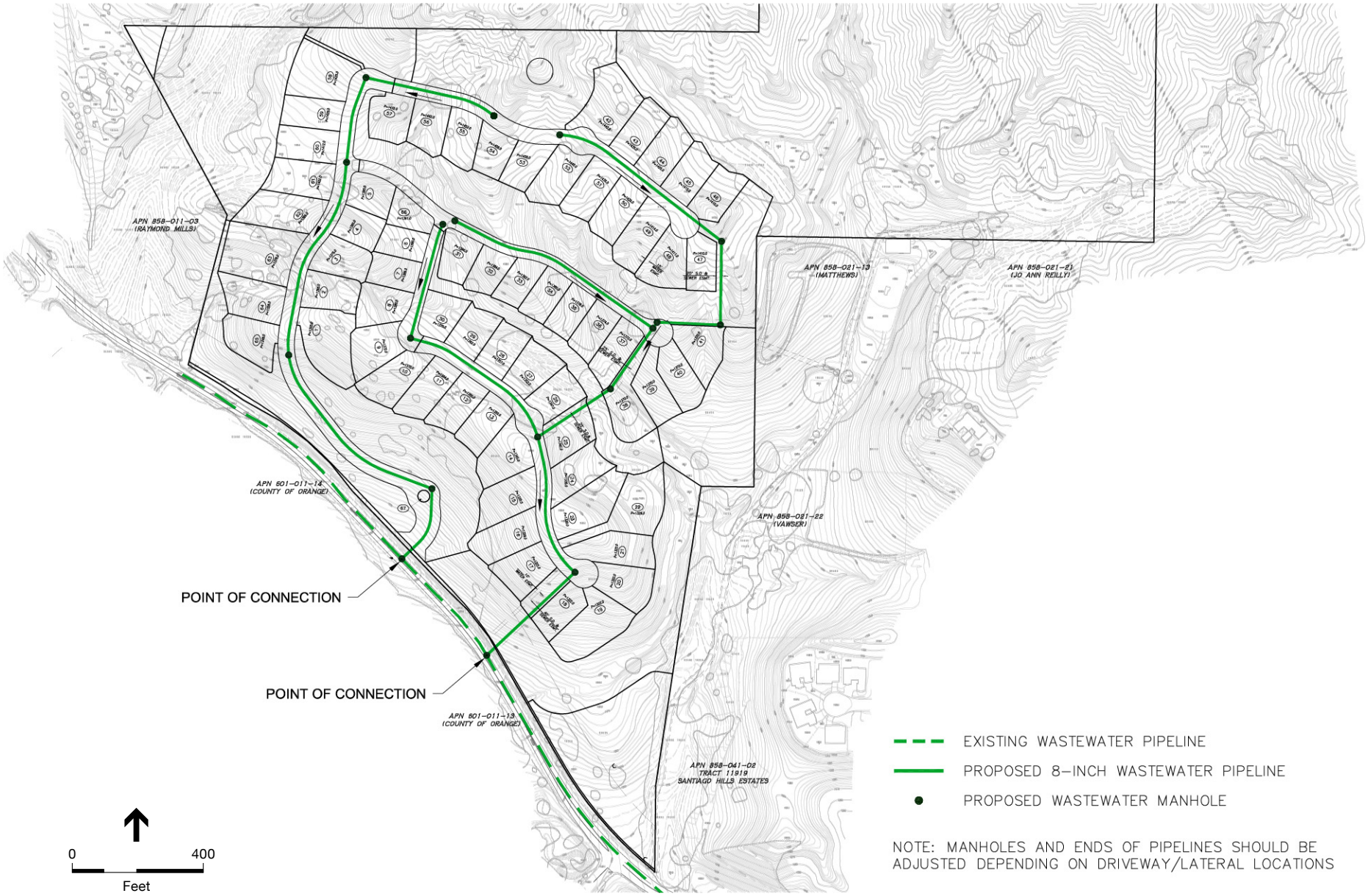
Significance Standard for Impact 3.15.1: Would the proposed project conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Proposed Project

The proposed project would develop 65 single-family homes on presently undeveloped land. These residences would generate wastewater associated with domestic residential use into the local sewer system. The anticipated amount of wastewater generated by the proposed project would be 270 gpd/per unit, or an average flow of 17,550 gpd (Psomas, 2012).

The proposed project would require the installation of 8-inch gravity sewer pipelines. A portion of the project would convey sewer water to the southeast through three utility easements in the eastern portion of the site to Santiago Canyon Road, which would connect to an existing 8-inch line (**Figure 3.15-2**). The remainder of the project would convey sewer water out of the proposed access road off Santiago Canyon Road, where it would also connect to an existing 8-inch sewer line.

Wastewater generated by the proposed project would be conveyed to the El Toro Road Sewage Lift Station via an interceptor sewer on El Toro Road and dual force main up Santa Margarita Parkway. Wastewater would be ultimately delivered to and treated at the Robinson Ranch WWTP. The Robinson Ranch WWTP currently has a capacity of 850,000 gpd.



SOURCE: Psomas, 2011.

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Figure 3.15-2
Wastewater Collection System

TCWD also purchases an additional 125,000 gpd of capacity in the Chiquita Wastewater Treatment Facility. The project applicant has already purchased collection, treatment, and disposal capacity within the TCWD regional wastewater system for up to 107 dwelling units, which provides more than sufficient sewer capacity for the 65 units proposed. Wastewater treatment requirements for the Robinson Ranch WWTP have been established by the RWQCB.

Waste discharge requirements for the wastewater treatment plant are based on all applicable state and federal regulations, policies and guidelines, and include limitations on effluent discharge and receiving water, turbidity, and toxicity. As discussed in Section 3.8, *Hydrology and Water Quality*, of this Draft EIR, the land uses proposed by the project would not discharge wastewater that contains harmful levels of toxins, which are typical to industrial and commercial uses that are regulated by the RWQCB, and all effluent would comply with the wastewater treatment standards of the RWQCB. This would be accomplished through implementation of project design features, including water quality detention basin(s) (PDF-23) and landscaping designed to treat storm runoff and urban pollutants (PDF-25), as well as through adherence to all BMPs contained in the required SWPPP.

Impact Determination: The existing wastewater treatment system would have adequate capacity to support the proposed project, and the volume and type of wastewater generated would not conflict with requirements of the RWQCB. Through implementation of project design features, the proposed project would result in less than significant impacts related to the wastewater treatment requirements of the RWQCB and no mitigation is necessary.

Non-Clustered Scenario

Similar to that described above for the proposed project, the non-clustered scenario would also convert vacant land to 65 single-family homes and would generate an estimated 270 gallons per day/per unit, or an average flow of 17,550 gallons per day of wastewater. As with the proposed project, wastewater would also be treated at the Robinson Ranch WWTP and discharge would comply with all state and federal regulations. Therefore, as with the proposed project, the non-clustered scenario would result in less than significant impacts related to the wastewater treatment requirements of the RWQCB.

Impact Determination: The existing wastewater treatment system would have adequate capacity to support the non-clustered scenario, and the volume and type of wastewater generated would not conflict with requirements of the RWQCB. The non-clustered scenario would result in less than significant impacts related to the wastewater treatment requirements of the RWQCB and no mitigation is necessary.

Impact 3.15.2: Require expansion of existing or new water or wastewater treatment facilities.

Significance Standard for Impact 3.15.2: Would the proposed project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Proposed Project

The proposed project would convert vacant land into 65 single-family homes and associated improvements, and would require the need for water and wastewater service. As discussed in the 2010 UWMP (page 14), the TCWD has previously approved SAMPs for three projects, including the previously approved Saddle Creek/Saddle Crest project in 2000, which was a larger project proposed (see Section 1.2, *Background*, of the Draft EIR). The proposed project as analyzed in this EIR only includes an updated iteration of the Saddle Crest portion of the original project (development densities have been reduced).

An updated Saddle Crest SAMP has been prepared for the proposed project, and TCWD is currently reviewing this information. The Saddle Crest SAMP can be found in its entirety in Appendix L. Approval is anticipated prior to certification of the Final EIR.

Wastewater

For the purposes of wastewater generation and treatment, the needs of the proposed project are fewer than those approved by TCWD for the original proposal, which was larger in scope. The TCWD estimates that single family residences would generate 270 gpd of wastewater; as a result, the proposed project would generate approximately 17,550 gpd (18.25 afy) of wastewater. TCWD estimates it has the capacity to collect and treat 1,035 afy of wastewater from 2015 through 2035. In 2010, TCWD processed 751 afy of wastewater (TCWD, 2011). TCWD included future projects such as Robinson Ridge, Saddleback Meadows, and the previously proposed Saddle Creek/Saddle Crest projects in their projections. As a result, TCWD has anticipated the build-out of a much larger development than would occur with the proposed project and based on this information, TCWD would have sufficient capacity to meet the future wastewater treatment demands. In addition, the project applicant has purchased and reserved wastewater capacity at the Chiquita Water Treatment Plant to accommodate the proposed project. TCWD has also stated that the existing sewer system should have adequate capacity to serve the project site (Psomas, 2012). Therefore, no new wastewater treatment facilities or expansion of existing facilities would be required.

Water Supply

Water consumption factors were developed for the proposed project in the Saddle Crest SAMP based on: (1) lot size; and (2) the amount of open space and landscaping to be irrigated (the open space estimate includes private areas, homeowners association (HOA) managed slopes and common landscaped areas, fuel modification zones, and oak tree preservation areas). Domestic demand projections were established on a per unit basis and average flat pad or lot size.

Total water demand estimated for the proposed project by component, as calculated in the 2012 Saddle Crest SAMP, is shown in **Table 3.15-3**. The estimated average water demand for the proposed project is expected to be 144,014 gpd or 161.31 afy. This equates to an average demand per dwelling unit of approximately 2,216 gpd. This translates into a maximum day demand of 294,786 gpd (or 0.46 cfs). Average day, maximum, and peak potable water demands are shown in **Table 3.15-4**. Based on the average demand per residential connection of 489 gpd/dwelling unit reported in TCWD's 1999 Master Plan, the proposed project has an estimated demand of 322 equivalent dwelling units. This is due primarily to the large pads and substantial HOA irrigation needed for common area slopes and fuel modification areas (Psomas, 2012).

TCWD currently has a combined capacity to convey 9.94 cubic feet per second (cfs) of reliable, year-round water supply from two imported water sources. This includes 5.94 cfs in the Baker Aqueduct, which conveys raw water to the District's Dimension Water Treatment Plant (DWTP) and 4 cfs of treated water through the Allen McColloch Pipeline. TCWD is currently participating in a regional water reliability project with other districts for the construction of the IRWD Baker Regional WTP, which would provide an additional 2 cfs of capacity (facility is anticipated to be on-line in 2013) (Psomas, 2012).

Developing a separate, non-domestic water system for common area irrigation demands (estimated at 55,833 gpd) for the project was investigated. However, TCWD has no non-domestic water available in the area of the project. Santa Margarita Water District's Oso Reservoir is the closest source; however, Santa Margarita Water District has no excess non-domestic water available in this system to supply the proposed project. Irvine Ranch Water District, whose boundaries are just across Santiago Canyon Road to the south and east, has no non-domestic water available in the area. Groundwater wells as a source for irrigation demands for the project was investigated, but a good producing well in this area would be a rarity and also would not be a reliable year-round source in the quantities required. Although there could be a potential savings of 39 percent to the project applicant in impact fees, due to the fact that there are no non-domestic or reliable groundwater sources in the vicinity, domestic water was assumed to be source for all water needs of the proposed project.

In estimating 2035 water demand, TCWD factored in approved future projects, which at that time, included the original Saddle Creek/Saddle Crest project that TCWD had approved. The 2035 TCWD estimates for water supply are 5,064 afy, and total demand (including larger approved projects like Saddle Creek/Saddle Crest which originally anticipated an estimated 316.71 afy as opposed to the actual 161.31) of 5,018 afy, providing a surplus of 46 afy. The proposed project's demand of 161.31 afy is covered in this projected 5,018 afy demand, as the Saddle Creek/Saddle Crest project was much larger in size and water demand.

TABLE 3.15-3
WATER DEMAND PROJECTIONS

Water Use Category	Area (sf)	ETo		Average Plant Factor for Hydrozone	Estimated Irrigation Efficiency	Estimated Irrigation Rate (ac-ft/ac)	% of ETo	Estimated Average Demand (gpd)
		in/yr	ft/yr					
Residential Water Use 65 DUs								
Household (Interior)[a]								17,550
Landscape (Exterior) [b, c]								
Turf & Pool (16 DUs pool equipped)	79,040	49.63	4.14	0.70	50%	5.8	140%	9,381
Turf (49 DUs non-pool equipped)	205,036	49.63	4.14	0.70	50%	5.8	140%	24,334
Other landscaping (16 DUs pool equipped)	88,336	49.63	4.14	0.55	50%	4.5	110%	8,237
Other landscaping (49 DUs non-pool equipped)	307,553	49.63	4.14	0.55	50%	4.5	110%	28,679
Subtotal Exterior	679,965							70,631
Residential Subtotal								**88,181**
HOA Common Area Irrigation								
Community Area Landscaping (Interior Slopes)	209,607	49.63	4.14	0.40	60%	2.8	67%	11,846
Fuel MOD Zone B (Zone A incl. in pads)	747,786	49.63	4.14	0.40	60%	2.8	67%	42,261
Area Around Retention Basin	30,528	49.63	4.14	0.40	60%	2.8	67%	1,725
Subtotal	987,921							
HOA Common Area Irrigation Subtotal								**55,833**
				Total Project Demand				**144,014**
				Average Demand/Dwelling Unit				**2,216**

[a] 270 gallons per DU per day (wastewater generation).
[b] Based on average lot size of 19,496 square feet , lot sizes are anticipated to be an average of over 17,500. Building footprint assumed to be 4,615 square feet, including garage. Hardscape assumed to be 4,420 square feet. For non-pool equipped homes, assume remaining area (10,461 square feet) is 40 percent Turf and 60 percent Other Landscaping (shrubs, ground cover, planters, etc.).
[c] Pool equipped assumptions: front yard is 68'x35' turf and remainder other landscaping. Rear yard is 80'x32' turf/pool and remainder other landscaping.

SOURCE: PSOMAS, 2012.

TABLE 3.15-4
AVERAGE DAY, MAXIMUM DAY, AND PEAK HOUR DEMANDS

Demand	Domestic Water Demand (gpd)	HOA Irrigation Demand (gpd)	Total Demand (gpd)
Average Day	88,181	55,833	144,014
Maximum Day	171,954	122,832	294,786
Peak Hour	424,726	245,664	670,390

SOURCE: PSOMAS, 2012.

As shown in Table 3.15-1, TCWD estimates greater supply than projected demand from 2015 through 2035. TCWD anticipated a much larger version of the proposed project when preparing their projected water demand estimates as part of the 2010 UWMP, which estimates that TCWD would have sufficient capacity to meet the anticipated future water supply demands. The Saddle Crest SAMP acknowledges that the proposed project would exceed the 2020 UWMP water use target, due largely to the irrigation requirements shown above in Table 3.15-3 and the unavailability of recycled water for irrigation use. However, the proposed project represents a substantial reduction in the amount of water that TCWD anticipated would be used for the original Saddle Creek/Saddle Crest project. Therefore, the TCWD would be able to provide water to meet the demand of the proposed project (see also Domestic Water and Services Letter from TCWD in Appendix N).

Water Supply Infrastructure

While available supply has been established for the project, the necessary infrastructure to convey this water to the site is not available. TCWD has indicated that there is no storage capacity in their existing system, and a new tank would need to be sized to meet the needs of the proposed project. Total water storage requirements for the proposed project were based on criteria established in TCWD's 1999 Water Master Plan, which calls for ten hours of maximum day demand for operational storage, five average days for emergency storage, and fire flow requirements. The reservoir, as described in Project Design Feature PDF-41, would be located in the northern portion of the project site as shown in Figure 2.3. The project alone would require approximately 910,000 gallons of storage capacity, and TCWD estimates that up to an additional 1,000,000 gallons will be needed as a possible oversize for emergency storage and existing development. Therefore, the proposed project includes development of a two million gallon reservoir (in the form of an aboveground water storage tank).

There is an existing 12-inch water line in Santiago Canyon Road that serves water to the project area, which is part of the Harris Grade Reservoir pressure zone. Given the topography of the project site, infrastructure improvements would be necessary in order to provide adequate water pressure to lots that have a high water line above the TCWD's existing water system (1,505 feet above mean sea level). In order to achieve adequate pressure for the higher elevation lots (a minimum static pressure of 60 pounds per square inch), two options are being considered, as

described in Project Design Feature PDF-40. The pump station would allow for water from the water district's existing system to feed the project's reservoir at a higher elevation with its own storage capacity to serve the project site with a gravity system to meet fire flow and domestic water service requirements. One is development of an on-site booster station similar to the existing Topanga Booster Station, which is located at the Santiago Estates development east of the project site. This existing facility consists of two 7.5-horsepower 120 gpm jockey pumps, a 100-horsepower 1,620 gpm fire flow pump, a backup emergency generator, and a 3,600-gallon hydropneumatic tank. Environmental impacts associated with the construction of this booster station would occur within the larger project footprint and are analyzed throughout this EIR.

The alternative to the on-site water pump station would entail upgrades to the existing Topanga Booster Station, including a 12-inch waterline extension to the project site to supply the reservoir. The off-site 12-inch waterline extension would be constructed from the existing Topanga system, connecting at the end of Wood Canyon Road, across APN 858-021-13 (Matthews) and APN 858-021-21 (Reilly), and connecting to the project site at the end of "E" Street, the northern most cul-de-sac in the proposed project. The hydraulic grade line of the Topanga system would be approximately 1,604 feet and would provide sufficient fire and service pressure to the upper lots. Impacts associated with the construction of this line would be less than significant.

Prior to increasing demands in the Harris Grade Reservoir pressure zone, a diesel pump at the Ridgeline Booster Station would require replacement by TCWD. The proposed project would be responsible for its pro-rata fair share of proposed upgrades to the Ridgeline Booster Station, which would occur within the walls of the existing facility. Environmental impacts associated with improvements to this booster station would be within a developed existing footprint and would be less than significant.

Impact Determination: The proposed project would require water and wastewater services. Wastewater infrastructure is sufficient to accommodate the proposed project and impacts would be less than significant. The proposed project would require potable water supply to meet domestic and landscaping demands; sufficient water supply from TCWD is available and impacts would be less than significant. However, water supply infrastructure improvements would be necessary to deliver water to the project site (PDF-40 and PDF-41). Impacts related to the construction and operation of these improvements would be less than significant and no mitigation is necessary.

Non-Clustered Scenario

Similar to that described above for the proposed project, the non-clustered scenario would convert vacant land into 65 single family homes and would result in demand for water and wastewater services.

Wastewater

Wastewater treatment demand would be similar to the proposed project (270 gpd per unit), as the non-clustered scenario would build the same number of homes as the proposed project (17,550

gpd of wastewater to be treated at the WWTP or Chiquita Wastewater Reclamation Plant). Additionally the sewer system would require a gravity sewer system and two sewer lift stations with associated force main lines would be required to collect sewage and connect to the existing sewer line in Santiago Canyon Road.

Water Supply

The non-clustered scenario would have the same residential interior domestic demand of water supply as the proposed project (17,550 gpd). Exterior water demand would be less than the proposed project (70,631 gpd) for individual lots due to the reduced physical pad size. However, the water demand for the HOA common areas would be an estimated 25 percent greater than the proposed project due to extended fuel modification requirements. This would result in an estimated 69,791 gpd of irrigation water. Therefore, the total estimated water demand for the non-clustered scenario would be a maximum of 157,972 gpd, or 2,430 gpd per unit. Though this is greater than the proposed project, it would still be less than what the TCWD originally anticipated for the project and sufficient capacity would be available to accommodate the non-clustered scenario.

Water Supply Infrastructure

Similar to the proposed project, the non-clustered scenario would require the following for its water system: (1) pump station No. 1 to supply on-site reservoir from existing TCWD system; (2) on-site reservoir to provide storage capacity to service site for fire flow and domestic service; and (3) pump station No. 2 to boost water from reservoir to residential lots at higher elevations than the high water line of the on-site reservoir can gravity serve to meet TCWD pressure requirements. The environmental impacts associated with these improvements are evaluated in this EIR and are described above.

Impact Determination: The non-clustered scenario would require water and wastewater services. Wastewater generation would be the same as the proposed project, and infrastructure is sufficient to accommodate this increase; impacts would be less than significant. The non-clustered scenario would require more potable water supply than the proposed project to meet landscaping demands; however, sufficient water supply from TCWD is available and impacts would be less than significant. Similar to the proposed project, water supply infrastructure improvements would be necessary to deliver water to the project site (PDF-40 and PDF-41). Impacts related to the construction and operation of these improvements would be less than significant and no mitigation is necessary.

Impact 3.15.3: Result in new or expanded storm water drainage facilities.

Significance Standard for Impact 3.15.3: Would the proposed project require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?

Proposed Project

Development associated with the proposed project would result in an increase in the amount of impervious surfaces on the project site, which would reduce storm water infiltration and increase peak storm runoff for the site (see Section 3.8, *Hydrology and Water Quality*, of this Draft EIR). Currently, the site consists exclusively of pervious surface area. After construction, the site would consist of 70 percent pervious area (Hunsaker, 2012b). Impervious areas would include dwelling units, streets, curbs, patios and driveways. Pervious areas would include the approximate 51 acres in the northeastern and northwestern portions of the project site, which would remain as open space, as well as landscaped slopes, common landscaping areas, private yards and other open spaces within the project.

A preliminary hydrology study, as required by Project Design Feature PDF-34, was conducted by Hunsaker & Associates in 2012 to analyze the site's existing drainage patterns and to design the proposed project's on-site drainage conveyance system in accordance with local requirements (Hunsaker, 2012a). The proposed project would cluster homes on the southwestern portion of the site, which would allow the sites main drainage along the eastern boundary of the site to be completely preserved as shown in Figure 3.8-1 (see Section 3.8, *Hydrology and Water Quality*, of this Draft EIR). This drainage pattern would be designed to mimic the natural hydrological characteristics of the site (Project Design Feature PDF-23). As a result, the main drainage course's existing flow would be maintained and a detention basin for hydromodification mitigation would be constructed which would decrease the potential to affect downstream drainages with increased flow, as well as velocities and sedimentation caused by filling drainage and conveying runoff through storm drain facilities.

The developed portions of the site would route storm water flows through storm drain facilities to the site's two detention basins located within the project site, at the southeast corner along Santiago Canyon Road for water quality treatment and hydromodification mitigation (see Figure 3.15-2). Project Design Features PDF-24 and PDF-25 would require construction of a water quality (dry extended detention) basin and other BMPs to minimize and treat stormwater runoff. The water quality basin would be designed with a maximum draw down period of 72 hours to mitigate potential vector issues. As specified by the County's Interim Hydromodification Criteria for implementation of the MS4 permit, the hydromodification detention basin would function to ensure that there is no net increase in post-project peak flows at discharge for a specific range of smaller storm events (10 percent of the 2-year peak flow to the 10-year peak flow) to mitigate potential hydromodification impacts to downstream drainages (PDF-34). In order to achieve this function, the basin would be sized to receive and manage runoff flows (per the South Orange County Hydromodification Control BMP Sizing Tool, based on development envelop of approximately 46.7 acres) (see Appendix I.1 of this Draft EIR). The hydromodification detention basin would employ approved vector control treatment issues (as specific in the California Department of Public Health's recommendation for BMPs for mosquito control in collaboration with OCVCD) to manage potential vector issues (PDF-36). In addition, Project Design Feature PDF-37 would incorporate the use of pervious pavers and roof drains connected to pervious areas, in order to reduce overall stormwater runoff.

Approximately 6.0 afy of storage would be required to mitigate potential hydromodification impacts to downstream drainages (Hunsaker, 2012b). The hydromodification basin would provide approximately 6.2 afy of storage capacity to meet the required hydromodification storage volume and allow for adequate freeboard. Consequently, the proposed project would not result in downstream hydromodification impacts. Treatment BMPs including the water quality basin and LID features, from the CWQMP (which was required by PDF-35), incorporated into the proposed project are expected to provide adequate treatment of runoff leaving the project site and to ensure all discharge is in compliance with the regulatory requirements. Project Design Feature PDF-48 would require that stormwater conveyed through the developed portion of the project site be collected and cleansed through a first flush treatment system, thereby reducing pollutants. The water quality main treatment facility (dry extended detention water quality basin) would be localized in the site's southeast corner to allow for efficient maintenance from Santiago Canyon Road. To complement the dry extended detention water quality basin, LID features, along with smaller BMPs, would be utilized such as pervious pavers, rood drains to pervious (landscaped) areas and native/irrigation efficient landscaping to promote and slow down surface flows. Implementation of Mitigation Measures MM 3.8-1 through MM 3.8-7 that are described in detail in Section 3.8, *Hydrology and Water Quality*, of this Draft EIR would further reduce impacts related to stormwater drainage. Furthermore, implementing BMPs contained in the required SWPPP for project construction would ensure that project runoff would not violate discharge requirements or degrade water quality.

Impact Determination: The proposed project would include stormwater drainage and detention basin facilities designed to minimize impacts related to stormwater pollution, hydromodification and increased runoff. These improvements would be contained within the project site as analyzed in this EIR. Implementation of Project Design Features PDF-23 through PDF-25, PDF-34 through PDF-37, and PDF-48 would reduce impacts to less than significant. See also Mitigation Measures MM 3.8-1 through MM 3.8-7 that are described in detail in Section 3.8, *Hydrology and Water Quality*, of this Draft EIR.

Non-Clustered Scenario

Similar to that described above for the proposed project, the non-clustered scenario would result in an increase in the amount of impervious surfaces on the project site, which would reduce storm water infiltration and increase peak storm runoff for the site. However, unlike the proposed project, the non-clustered scenario would build on the northeastern portion of the site and would interfere with the eastern main drainage and would have to create new drainage facilities, such as storm drain lines to intercept and convey runoff, which may adversely affect downstream drainages with increased flow, or from velocities and sedimentation caused by filling drainages and conveying runoff through new storm drains.

As discussed in Section 3.8, *Hydrology and Water Quality*, of this Draft EIR, replacing natural drainages with paved roads, manufactured slopes and storm drain facilities, runoff velocities and volume would increase under the non-clustered scenario, as would the potential for downstream sedimentation from the associated grading disturbances. With the potential for increased flows

(volume and velocity) and sediment transport, downstream drainages may be impacted with excessive channel erosion, planform migration, alteration to baseflow, or changes in bed material composition as well as biologic impacts to the streams. These are precisely the hydrologic conditions of concern the current MS4 permit is requiring proposed development to account for and mitigate against.

Similarly, water quality treatment would also be affected by a non-clustered scenario's more spread out design, which requires more street area than a clustered approach (proposed project) to access all portions of the development site. For example, the impervious paving required for the private street system under the non-clustered scenario is approximately 33 percent more than the proposed project (approximately nine acres of private streets in the non-clustered scenario as opposed to approximately six acres in the proposed project). Consequently, more impervious area over a larger percentage of the project site would require more treatment control BMPs to handle the several different drainage area discharge points to effectively treat the site's runoff in comparison to the proposed project with one discharge location and main treatment control BMPs. The multiple treatment BMP locations would impact all of the drainage area's natural processes as well as result in higher maintenance costs in comparison to the proposed project to ensure the multiple BMP facilities are functioning properly.

Therefore, the non-clustered scenario, though consistent with the design guidelines and regulations of the F/TSP, doesn't meet the intent of the resource agencies' current regulations for development proposals relative to water quality function and hydromodification. The main issue with a non-clustered scenario is that it fails to preserve the project's most sensitive and biologically significant features, an essential principle of the LID techniques required by the MS4.

Additionally, the non-clustered scenario would require several detention basins at various outlet points to mitigate downstream drainage courses and impacts to storm drains. As a result, although impacts would be greater than those of the proposed project, impacts from the non-clustered scenario would not cause a significant environmental impact from new or expanded storm drain facilities, and impacts would also be less than significant.

Impact Determination: Construction and operation of the non-clustered scenario would result in increased drainage and stormwater runoff from the site. Detention basins and outlet structures such as those described in Project Design Features PDF-24 and PDF-25 would be required to mitigate the increased runoff (volume and velocity at discharge points to be consistent with the project site's natural drainage conditions). A hydrology analysis (PDF-34) and a CWQMP (PDF-35) would need to be prepared to ensure impacts would be less than significant. Project Design Features PDF-36, PDF-37, and PDF-48 would also be incorporated reduce impacts to less than significant. In addition, the non-clustered scenario may require other in-stream drainage devices throughout the project site such as check dams, drop structures, rip rap, and energy dissipaters to ensure impacts to downstream hydrology and habitat would be less than significant. Project Design Feature PDF-23 would not be incorporated into the non-clustered scenario, which could

increase overall site drainage; however, impacts would still be less than significant. However, impacts would be greater than those associated with the proposed project.

Impact 3.15.4: Be adequately served by water providers.

Significance Standard for Impact 3.15.4: Would the proposed project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Proposed Project

As discussed under Impact 3.15.2 and as analyzed in the Saddle Crest SAMP (see Appendix L), TCWD has sufficient capacity to meet future water supply demands, including that of the proposed project. In addition, TCWD had approved a SAMP for the original project, which was larger, thus confirming that the water supply infrastructure improvements proposed under the project would be sufficient to serve the proposed project. Therefore, sufficient water supplies would be available to serve the project from existing entitlements and resources and no new or expanded entitlements would be necessary.

Impact Determination: Sufficient water supply would be available to serve the proposed project, and there would be less than significant impacts related to water supply. No mitigation would be necessary.

Non-Clustered Scenario

As described above for Impact 3.15.2, the non-clustered scenario would require additional water for the increased landscaped areas. However, this additional amount would still remain below previously approved amounts for the larger project. Therefore, the TCWD has sufficient capacity to meet future water supply demands, including that of the non-clustered scenario

Impact Determination: Sufficient water supply would be available to serve the non-clustered scenario. Impacts would be less than significant and no mitigation is necessary.

Impact 3.15.5: Be adequately served by wastewater treatment providers.

Significance Standard for Impact 3.15.5: Would the proposed project result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Proposed Project

As discussed under Impact 3.15.2, the Robinson Ridge WWTP has sufficient capacity to meet future wastewater demands within its service area, including that of the proposed project. In addition, adequate capacity is available in the area's existing wastewater systems (El Toro Road Sewage Collection System and Trunk Sewer Extension) to serve the project. TCWD requires landowners to purchase sewage capacity based on a pro-rata share in the existing facilities per the property's sewer demand. The applicant has previously purchased sewer capacity in the existing system exceeding the sewage demands created by the proposed development to satisfy the required financial contribution for project's wastewater service.

Impact Determination: Adequate wastewater treatment capacity is available within TCWD's service area to meet the demands of the proposed project. The proposed project would have a less than significant impact and no mitigation would be necessary.

Non-Clustered Scenario

The non-clustered scenario would result in the same number of units and therefore the same amount of wastewater generated as the proposed project. As discussed above, TCWD has sufficient capacity to meet future wastewater demands.

Impact Determination: Adequate wastewater treatment capacity is available within the TCWD's service area to meet the demands of the proposed project. The proposed project would have a less than significant impact and no mitigation would be necessary.

Impact 3.15.6: Be adequately served by solid waste disposal providers.

Significance Standard for Impact 3.15.6: Would the proposed project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Proposed Project

The Frank Bowerman Landfill is located nearest to the project site and would most likely receive the solid waste from the proposed project. MWOC would provide collection services for recyclable material which would be transported to Sunset Environmental in Irvine for processing. Refuse and recyclable materials would be collected once a week. WMOC estimates that approximately 105 to 110 pounds of refuse is collected on a weekly basis per household (County of Orange, 2000). As a result, the 65 single family homes in the proposed project would generate approximately 6,825 pounds per week to 7,150 pounds per week of solid waste, or up to 3.5 tons of solid waste per week.

The Frank Bowerman Landfill is anticipated to have available capacity through the year 2053, and has a capacity of 8,500 tpd, and the proposed project would contribute approximately 3.5 tons

per week, or 0.5 tpd, and can be accommodated by the landfill. Therefore, the proposed project would be served by a landfill that has sufficient permitted capacity to accommodate the project's solid waste disposal needs

Impact Determination: The existing Frank Bowerman Landfill has sufficient capacity to serve solid waste generated by the proposed project. Impacts related to landfill capacity and waste disposal would be less than significant and no mitigation is necessary.

Non-Clustered Scenario

The non-clustered scenario would have 65 residential units, as would the proposed project. Therefore, solid waste generation rates would be the same for the non-clustered scenario (0.5 tpd), and would also be serviced by the Frank Bowerman Landfill through MWOC. Therefore, the non-clustered scenario would also be served by a landfill that has sufficient permitted capacity to accommodate the project's solid waste disposal needs

Impact Determination: The existing Frank Bowerman Landfill has sufficient capacity to serve solid waste generated by the non-clustered scenario. Impacts related to landfill capacity and waste disposal would be less than significant and no mitigation is necessary.

Impact 3.15.7: Comply with solid waste regulations.

Significance Standard for Impact 3.15.7: Would the proposed project comply with federal, state, and local statutes and regulations related to solid waste?

Proposed Project

As discussed above, total solid waste generated by the proposed project would result in an increase of approximately 3.5 tons per week of solid waste. The County is obligated to meet state mandates for solid waste reduction by participating in local and regional programs to encourage per capita reduction of solid waste. Reductions would be achieved through recycling and composting of solid waste, reduction of the amount of solid waste produced, and public education. The proposed project would comply with mandates regarding solid waste management, and would participate in the County's recycling program, which provides designated recycle (blue) cans for recycling on a weekly basis. The proposed project would also comply with all federal and state regulations regarding solid waste.

Impact Determination: The proposed project would generate domestic waste associated with residential uses and would comply with federal, state, and Orange County statues related to solid waste. Any impacts associated with solid waste disposal would be reduced to less than significant by implementation of Mitigation Measure MM 3.15-1.

Non-Clustered Scenario

Similar to that described above for the proposed project, the non-clustered scenario would also comply with mandates regarding solid waste management, including the provision of designated blue can recycling for each residence. The non-clustered scenario would also comply with all federal and state regulations regarding solid waste.

Impact Determination: The non-clustered scenario would generate domestic waste associated with residential uses and would comply with federal, state, and Orange County statues related to solid waste. Any impacts associated with solid waste disposal would be reduced to less than significant by implementation of Mitigation Measure MM 3.15-1.

3.15.6 Cumulative Impacts

The County of Orange considers the projected population increases within the region in order to plan for increases in the demand for utilities and service systems, and therefore the geographic area in which cumulative effects to utility systems could occur is the County as a whole. Regarding water supply, TCWD factored in the demand associated with other cumulative projects (including Saddleback Meadows and Robinson Ridge) within their projected water supply and wastewater demand and have found that they would have sufficient water supply and sufficient capacity for wastewater treatment through 2035. Regarding water supply infrastructure, future developments would be required to ensure that sufficient delivery, pump station, and water pressure requirements are met. The infrastructure improvements included in the project area site-specific in nature and would not contribute to a cumulative effect. It is also anticipated that the Frank R. Bowman Landfill has sufficient capacity to accommodate that of the proposed project or the non-clustered scenario as well as the solid waste of the cumulative development projects. The anticipated closure date of 2053 is well into the future, and no known cumulative issues related to solid waste services exist.

Impact Determination: The proposed project or the non-clustered scenario, in conjunction with other past, present, and reasonably foreseeable future projects would not have a significant cumulative impact related to utilities and service systems, including solid waste systems, water consumption, and wastewater generation. Neither the proposed project nor the non-clustered scenario would contribute to a cumulatively significant impact, and no mitigation is required.

3.15.7 Mitigation Measures

MM 3.15-1 Prior to the issuance of any precise grading permit, the applicant shall obtain approval from the Manager, OC Planning of a site plan delineating the capacity, number, and location of all proposed solid waste and recyclable collection areas.

3.15.8 Impact Determination

The proposed project and the non-clustered scenario would have similar impact determinations for utilities and service systems. Regarding Impact 3.15.1, the existing wastewater treatment system would have adequate capacity to support the proposed project or the non-clustered scenario, and the volume and type of wastewater generated would not conflict with requirements of the RWQCB. The proposed project or non-clustered scenario would result in less than significant impacts related to the wastewater treatment requirements of the RWQCB and no mitigation is necessary.

Regarding Impact 3.15.2, the proposed project or non-clustered scenario would require water and wastewater services. Wastewater infrastructure is sufficient to accommodate both the proposed project and non-clustered scenario and impacts would be less than significant. The proposed project would require potable water supply to meet domestic and landscaping demands (although demand would be slightly greater for the non-clustered scenario); sufficient water supply from TCWD is available and impacts would be less than significant. However, water supply infrastructure improvements would be necessary to deliver water to the project site. Impacts related to the construction and operation of these improvements would be less than significant and no mitigation is necessary.

The proposed project would include stormwater drainage and detention basin facilities designed to minimize impacts related to stormwater pollution, hydromodification and increased runoff (Impact 3.15.3). These improvements would be contained within the project site as analyzed in this EIR. Mitigation Measures MM 3.15-1 through MM 3.15-9, as well as implementation of Project Design Features PDF-24 through PDF-26, as well as Mitigation Measures MM 3.8-1 through MM 3.8-7 that are described in detail in Section 3.8, *Hydrology and Water Quality*, would reduce impacts to less than significant.

Sufficient water supply would be available to serve the proposed project and non-clustered scenario, and there would be less than significant impacts related to water supply (Impact 3.15.4). No mitigation would be necessary. Similarly, adequate wastewater treatment capacity is available within the TCWD's service area to meet the demands of the proposed project or non-clustered scenario (Impact 3.15.5) and impacts would be less than significant impact.

Regarding Impact 3.15.6, the existing Frank Bowerman Landfill has sufficient capacity to serve solid waste generated by the proposed project or the non-clustered scenario. However, any potential impacts related to landfill capacity and solid waste disposal would be reduced to less than significant by implementation of Mitigation Measure MM 3.15-1.

The proposed project or non-clustered scenario would generate domestic waste associated with residential uses and would comply with federal, state, and Orange County statues related to solid waste (Impact 3.15.7). Impacts would be less than significant and no mitigation is necessary.

The proposed project or the non-clustered scenario, in conjunction with other past, present, and reasonably foreseeable future projects would not have a significant cumulative impact related to utilities and service systems, including solid waste systems, water consumption, and wastewater generation. Neither the proposed project nor the non-clustered scenario would contribute to a cumulatively significant impact, and no mitigation is required.